

Commonwealth of Kentucky
Division for Air Quality
PERMIT STATEMENT OF BASIS

Proposed Federally-enforceable permit No. VF-04-002

MeadWestvaco Kentucky, L.P.

Wickliffe, KY 42087-0278

AUGUST 8, 2005

JAMES A. NEAL, REVIEWER

PLANT I.D. # 21-007-00002

APPLICATION LOG # 56302

SOURCE DESCRIPTION:

The MeadWestvaco Kentucky, L.P. (MeadWestvaco) pulp and paper mill ("the Mill") is located in Wickliffe, Ballard County, Kentucky and produces pulp using the Kraft process. The Mill either sells the pulp or processes it into fine white paper products.

In the Kraft pulping process used at the Mill, a continuous digester operating at elevated temperature and pressure is used to process wood chips into pulp. Wood chips are fed into the top of the digester and mixed with the cooking chemicals (comprised primarily of sodium sulfide and sodium hydroxide and referred to as "white liquor"). The chip/cooking liquor mixture moves down through the digester, the lignin and other components are dissolved, and the cellulose fibers are released as pulp. After leaving the digester, the pulp is washed, and the spent chemicals (now known as "black liquor") are separated and recycled back into white liquor through the chemical recovery process. In the chemical recovery process, black liquor from the cooking process is concentrated in multiple-effect evaporators to about 65-70 percent solids. The strong black liquor is then combusted in the recovery furnace. Combustion of the organics dissolved in the black liquor provides heat for generating process steam and for converting the sodium sulfate to sodium sulfide. Inorganic chemicals present in the black liquor collect as a molten smelt at the bottom of the furnace.

The smelt is dissolved in water to form green liquor, which is transferred to a causticizing tank where quicklime (calcium oxide) is added to convert the solution back to white liquor for return to the digester system. Pulp dryers, Lines 1 and 2, are used to dry pulp. Pulp that is processed by the Mill into paper is coated and dried in the Coater/Dryer Complex. Lime mud precipitates from the causticizing tank after which it is calcined in the lime kiln to regenerate quicklime.

Mill operations are supported by various ancillary systems used to generate steam, process heat, raw material storage, process wastewater, store fuels, generate emergency electricity, etc. for use in the pulp and papermaking process. Steam is generated from the recovery furnace, two power boilers, and a combination boiler.

The Combination Boiler, EIS 09, is a multi-fuel boiler that supplies a significant portion of the Mill's steam supply. The boiler was constructed in 1979 and is capable of producing up to 450,000 pounds of steam per hour. Fuels fired include: bark/wood waste, waste treatment sludge, waste oil, and natural gas. The unit controls air pollution emissions by an ESP. This Combination Boiler is also used as an incineration point for the non-condensable gas (NCG) vent streams from the pulping processes in the Mill.

The construction permit application was received January 1, 2004 and logged complete June 8, 2004. The construction permit authorizes the Wickliffe Mill to fire tire derived fuel (TDF) in the

combination boiler for a limited trial test period less than or equal to 269 hour over any 12-month rolling period.

A federally enforceable permit (FEP) VF-01-002 was issued February 27, 2002. This FEP was based on a construction permit issued in 1989 and denoted as C-89-148, which allowed combustion of alternate materials, excluding TDF, other than wood. State origin requirements listed on these permits have been incorporated into the current FEP, VF-04-002.

The average heat content of the bark and wood waste generated on-site has decreased in recent years to the point where it makes fiscal and technical sense to fire other fuels in the combination boiler.

The Wickliffe Mill has proposed to fire tire derived fuel (TDF) in the combination boiler for a limited trial test period to collect emissions data over a range of operation and in conjunction with the various current fuels in order to properly assess the permitting requirements and propose future permit conditions.

TDF will be delivered to the Mill via truck before and during the trial test period. Existing bark storage areas will be utilized to temporarily store the TDF prior to introduction to the boiler. The Mill will be able to use the existing fuel delivery system for bark as a means to feed TDF to the boiler. No physical or operational changes will be required to the boiler to accommodate TDF as a new fuel.

COMMENTS:

For the purpose of combustion in the Power Boiler, EIS 09, fuel oil is defined not to include waste oil. Fuel oil is not a source of combustibles for this Power Boiler. However, waste oil is also an approved fuel for the Power Boiler.

Under conditions of this FEP, EPA defines continuous as one (1) reading every 15 minutes [40 CFR 72.2 and 40 CFR 60.13(e)(2)] for CEMS and one reading every six (6) minutes for COMS.

Emission Factors, Emissions Inventory, and their source:

MeadWestvaco has conducted a detailed analysis of the expected emissions increases associated with introducing TDF into the Bark Boiler during the trial test period. The analysis identifies the expected emissions increases associated with firing TDF during the trial test period for assessing applicability of the Prevention of Significant Deterioration (PSD) regulation at 401 KAR 51:017. An emissions increase is determined pursuant to the PSD program by calculating the difference between past actual baseline emissions and future potential to emit (PTE) for the modified emission units. If the emissions increase exceeds the PSD threshold levels for any pollutant, then a netting analysis is required to be conducted to determine if the net emissions increase is significant and thus the project would be considered a “major modification”. When the source is combusting TDF, emissions have been summarized in Table A.

Table A

Pollutant	Baseline Average (tons/yr*)	Future Potential to Emit (tons/yr*)	Net Emission Increase (Tons)	PSD Significance Threshold (tons/yr)
PM/PM10	2.5	8.5	5.9	25/15
NOx	10.5	33.9	23.4	40
SO2	28.1	67.9	39.8	40
VOC	0.1	0.9	0.9	40
CO	3.5	4.3	0.8	100
Pb	1.2E-5	6.4E-05	5.2E-05	0.6
Fluorides	7.1E-6	0.1	0.1	3
TRS/H2S	0.0	0.0	0.0	10
H2SO4	0.1	0.2	0.1	7

* The trial period shall not exceed 269 hours for a rolling 12-month period. Baseline was established based on heat input for the last two years. Future potential was calculated based on the allowable permitted heat input and TDF usage of 269 hours for a rolling 12-month period.

The Mill has committed to the above emissions rates by limiting operations not to exceed 269 hours/yr. Emission rates (future potential to emit) and emission rate changes (net emission increase (tons) (limit) will be verified by performing stack tests and monitoring and reporting as prescribed in the federally enforceable permit (FEP).

The only unit affected by this project will be the Bark Boiler; no other facility emissions units will experience an emissions increase associated with the project. As stated previously, fugitive emissions associated with the TDF delivery, storage, and handling will be negligible and have not been included as part of this analysis.

Baseline Emissions

Past actual baseline emissions are calculated for the trial test period based on the maximum 30-day rolling average heat input from the previous two representative operating years. The maximum 30-day rolling average heat input is utilized since it is representative of the operating conditions that will be targeted for the trial test and the trial test will coincide with the peak mill heating season. The fuel mix from 2001 was determined to be the most representative based on a review of past operating data. The heat input by fuel is calculated by applying the 2001 fuel mix percentages, using typical fuel heating values, to the maximum 30-day rolling average heat input to the boiler. Regulated pollutant emissions are calculated on a fuel-specific basis, where applicable, and totaled by pollutant to determine the baseline. Emission factors are derived from a variety of sources including:

- EPA's "Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume I – Stationary Point and Area Sources" (AP-42);
- Past mill emissions testing results; and
- Annual emissions statements.

Summary tables documenting the baseline emissions calculations and the source of emission factors are included as Attachment B. The Bark Boiler baseline emissions are summarized in Tables B-2 and B-4. The baseline and proposed trial test period total heat input and fuel mix are depicted in Table B-1.

Potential to Emit

Development of a representative PTE for the boiler for the proposed trial test period is calculated similar to the baseline emissions except for the following notable differences:

- The maximum permitted heat input (631 MMBtu/hr) is assumed for the entire test period; and
- The fuel mix is based on 15% TDF, 5% Natural Gas, <0.01% Waste Oil and ~80% bark.

The PTE for all PSD pollutants are based on a combination of fuel and pollutant-specific emission factors from similar data sources as noted above. Emission factors for wood residue, natural gas, and waste oil are from EPA's "*Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume I – Stationary Point and Area Sources*" (AP-42) or are based on existing permit limits, where applicable. The AP-42 emission factors for residual oil were used for waste oil due to the lack of any site-specific emissions data.

No actual area or site-specific pollutant emission factor data is available for TDF. Therefore, MeadWestvaco contacted several TDF industry representatives and obtained analytical data and developed emission factors to determine how the fuels should be compared and which emission factors should be used to estimate emissions associated with TDF firing. MeadWestvaco also reviewed various facilities in the U.S. Environmental Protection Agency (EPA) document "*Air Emissions from Scrap Tire Combustion*", EPA-600/R-97-115, October 1997 to develop representative emission factors.

Based on testing conducted and published in the EPA "*Air Emissions from Scrap Tire Combustion*" document, potential emissions of PM, VOC, NO_x, and SO₂ from TDF that has had the wire removed are not appreciably different than from other conventional fossil fuels such as lignite. Lignite emission factors are used to estimate VOC, Pb, and Fluorides emissions. Emissions tests performed on facilities substituting TDF for a portion of the coal in the boiler feed have typically shown a decrease in PM emissions due to the lower ash content and a decrease in NO_x due to the lower fuel-bound nitrogen content of TDF. Emissions of VOC from TDF in a well-designed and well-operated boiler were found to be emitted at emission rates on the same order of magnitude as from natural gas. After careful consideration of the emission test data that is summarized, MeadWestvaco determined that the emission factors from the Modesto Energy Company unit located in Westley, California (Facility A) that fired 100% TDF are most appropriate to apply to the mill. The Facility A emission factors for the TDF heat input are used in the emission inventory for CO.

MeadWestvaco currently has non-fuel specific emission limits for PM/PM₁₀, NO_x, and SO₂ which are 0.1 lb/MMBtu, 0.4 lb/MMBtu, and 0.8 lb/MMBtu, respectively. These emission limits have been used by the mill to calculate the PTE for these pollutants for the proposed firing scenario.

Tables B.1 and B.2 were developed by the Mill to provide needed data to develop the information for the Bark Boiler PTE as summarized in Tables B-3 and B-4. As shown in Table B-4, the proposed TDF trial test will not result in a significant emissions increase for any PSD pollutants during the trial test period.

**Table B.1 MEADWESTVACO, WICKLIFFE,
KENTUCKY Proposed Bark Boiler TDF Trial Test
Fuel Firing Scenario**

Fuel(a)	Baseline Scenario(b)		Test Scenario Fuel Mix(c)	
Wood Waste	12,131 tons	100,053 MMBtu	16,455 tons	135,723 MMBtu
Natural Gas	19 MMcf	19,868 MMBtu	8 MMcf	8,487 MMBtu
Waste Oil	379 gal	53 MMBtu	536 gal	75 MMBtu
NCGs (ADTP)	8,416 ADTP		8,416 ADTP	
TDF	0 tons	0 MMBtu	821 tons	25,461 MMBtu
Hours of Operation		269 hours		269 hours
Total		119,974 MMBtu		169,739 MMBtu

(a) Heat contents of fuels:

<u>Natural Gas</u>	<u>TDF</u>	<u>Wood Waste</u>	<u>Waste Oil</u>
1,020 Btu/cf	15,500 Btu/lb	4,124 Btu/lb	140,000 Btu/gal

(b) Baseline heat input is from the maximum 30 day average heat input over the last 2 years of 446 MMBtu/hr and the 2001 ratio of fuel types. The maximum 30 day average heat input is a representative baseline for the TDF trial burn test period because the test period will coincide with the peak heating season and the mill will be operating the boiler at maximum sustainable heat input during the test period.

(c) TDF: Equal to 15% of the maximum hourly heat input of 631 MMBtu/hr.

Bark/Woodwaste: Equal to the remaining hourly heat input after considering the contribution from TDF, natural gas, and waste oil. Natural Gas: Equal to 5% of the maximum hourly heat input of 631 MMBtu/hr.

Waste Oil: Used 2001 ratio of waste oil (MMBtu) to total boiler (MMBtu) to calculate waste oil usage.

NCG's: Equal to 2001 data.

Table B.2
Meadwestvaco, Wickliffe, Kentucky
Bark Boiler TDF Trial Test Baseline Emission Rates

Pollutant	Emission factor	Ref.	Control Efficiency(%)	Fuel Firing Rate(a)	Baseline Emissions (tons/yr)
Fuel Fired:	Natural Gas				
PM/PMIO	N/A			N/A	N/A
NOx	N/A			N/A	N/A
SO2	N/A			N/A	N/A
VOC	N/A			N/A	N/A
CO	N/A			N/A	N/A
Pb	0.0005 lb/MMcf	b	99.5%	19 MMcf	2.4E-08
Fluorides	N/A			N/A	N/A
TRS/H2S	N/A			N/A	N/A
H2SO4	N/A			N/A	N/A
Fuel Fired:	Bark/Woodwaste				
PM/PMIO	N/A			N/A	N/A
NOx	N/A			N/A	N/A
SO2	N/A			N/A	N/A
VOC	N/A			N/A	N/A
CO	N/A			N/A	N/A
Pb	4.80E-05 lb/MMBtu	c	99.5%	100,053 MMBtu	1.2E-05
Fluorides	N/A			N/A	N/A
TRS/H2S	N/A			N/A	N/A
H2SO4	0.023 lb/ton	f		12,131 tons	0.1
Fuel Fired:	Waste Oil (Residual)				
PM/PMIO	12.41 lb/10 ³ gal	d	99.5%	0.38/10 ³ gal	1.2E-05
NOx	47 lb/10 ³ gal	d		0.38/10 ³ gal	8.9E-03
SO2	157 lb/10 ³ gal	d		0.38/10 ³ gal	3.0E-02
VOC	0.76 lb/10 ³ gal	d		0.38/10 ³ gal	1.4 E-04
CO	5 lb/10 ³ gal	d		0.38/10 ³ gal	9.5 E-04
Pb	1.51 E-03 lb/10 ³ gal	d	99.5%	0.38/10 ³ gal	1.4E-09
Fluorides	3.73E-02 lb/10 ³ gal	d		0.38/10 ³ gal	7.1E-06
TRS/H2S	N/A			N/A	N/A
H2SO4	6.9825 lb/10 ³ gal	d,e		0.38/10 ³ gal	1.3E-03
Fuel Fired:	Combined Natural Gas/Bark/NCG's				
PM/PMIO	0.043 lb/MMBtu	g		119,921 MMBtu	2.6
NOx	0.175 lb/MMBtu	g		119,921 MMBtu	10.5
SO2	0.468 lb/MMBtu	g		119,921 MMBtu	28.1
VOC	0.001 lb/MMBtu	g		119,921 MMBtu	0.1
CO	0.0583 lb/MMBtu	g		119,921 MMBtu	3.5
Pb					
Fluorides					
TRS/H2S					
H2SO4					

(a) Annual fuel firing rates were based on the maximum 30 day average heat input over the last 5 years of 446 MMBtu/hr, the 2001 ratio of fuel types, and 269 hours of operation.

(b) AP-42, Chapter 1.4

(c) AP-42, Chapter 1.6 (3/02).

(d) AP-42, Chapter 1.3

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(e) Sulfur and ash contents assumed to be 1 %. H2SO4 estimated assuming all SO3 combines with water in stack to form acid mist.

(f) Emission factor from the Mill PSD application dated September 2000.

(g) Emission factors from Wickliffe testing.

TABLE B-3 MEADWESTVACO, WICKLIFFE, KENTUCKY
BARK BOILER TDF TRIAL TEST
POTENTIAL TO EMIT PSD-REGULATED POLLUTANTS

Pollutant	Emission Factor	Reference	Control Efficiency (%)	Fuel Firing Rate (a)	Potential to Emit (tons/yr)
Fuel Fired:	Natural Gas				
PM1/M10	0.1 lb/MMBtu	j		8,487 MMBtu	0.4
NOx	0.4 lb/Mbtu	j		8,487 MMBtu	1.7
SO2	0.8 lb/MMBtu	j		8,487 MMBtu	3.4
VOC	5.5 lb/MMcf	b		8 MMcf	2.3E-02
CO	84 lb/MMcf	b		8 MMcf	0.3
Pb	0.0005 lb/MMcf	b	99.5%	8 MMcf	1.0E-08
Fluorides	N/A			N/A	N/A
TRS/H ₂ S	N/A			N/A	N/A
H ₂ SO ₄	N/A			N/A	N/A
Fuel Fired:	Bark/Woodwaste				
PM/PMIO	0.1 lb/MMBtu	j		135,723 MMBtu	6.8
NOx	0.4 lb/MMBtu	j		135,723 MMBtu	27.1
SO2	0.8 lb/MMBtu	j		135,723 MMBtu	54.3
VOC	0.013 lb/MMBtu	c		135,723 MMBtu	0.9
CO	0.058 lb/MMBtu	g		135,723 MMBtu	3.9
Pb	4.80E-05 lb/MMBtu	c	99.5%	135,723 MMBtu	1.6E-05
Fluorides	N/A			N/A	N/A
TRS/H ₂ S	N/A			N/A	N/A
H ₂ SO ₄	0.023 lb/ton	f		16,455 tons	0.2
Fuel Fired:	Waste Oil (Residual)				
PM/PMIO	0.1 lb/MMBtu	j		75 MMBtu	3.7E-03
NOx	0.4 lb/MMBtu	j		75 MMBtu	1.5E-02
SO2	0.8 lb/MMBtu	j		75 MMBtu	3.0E-02
VOC	0.76 lb/10 ³ gal	d		0.54 x 10 ³ gal	2.0E-04
CO	5 lb/10 ³ gal	d		0.54 x 10 ³ gal	1.3E-03
Pb	0.00151 lb/10 ³ gal	d	99.5%	0.54 x 10 ³ gal	2.0E-09
Fluorides	0.0373 lb/10 ³ gal	d		0.54 x 10 ³ gal	1.0E-05
TRS/H ₂ S	N/A			N/A	N/A
H ₂ SO ₄	6.9825 lb/10 ³ gal	d,e		0.54 x 10 ³ gal	1.9E-03
Fuel Fired:	Tire Derived Fuel (TDF)				
PM/PMIO	0.1 lb/MMBtu	j		25,461 MMBtu	1.3
NOx	0.4 lb/MMBtu	j		25,461 MMBtu	5.1
SO2	0.8 lb/MMBtu	j		25,461 MMBtu	10.2
VOC	0.03 lb/ton	i		821 tons	1.2E-02
CO	0.000072 lb/MMBtu	h		25,461 MMBtu	9.2E-04
Pb	0.0234 lb/ton	i	99.5%	821 tons	4.8E-05
Fluorides	0.15 lb/ton	i		821 tons	0.1
TRS/H ₂ S	N/A			N/A	N/A
H ₂ SO ₄	N/A			N/A	N/A

(a) Annual fuel firing rates were based on permit limit of 631 MMBtu/hr and 269 hours of operation. Fuel mix is based on worst case test scenario as follows:

TDF: Equal to 15% of the maximum hourly heat input of 631 MMBtu/hr.

Bark/Woodwaste: Equal to the remaining hourly heat input after considering the contribution from TDF, natural gas, and waste oil. Natural Gas: Equal to 5% of the maximum hourly heat input of 631 MMBtu/hr.

Waste Oil: Used 2001 ratio of waste oil (MMBtu) to total boiler (MMBtu) to calculate waste oil usage.

NCG's: Equal to 2001 data.

(b) AP-42, Chapter 1.4 (7/98).

(c) AP-42, Chapter 1.6 (3/02).

(d) AP-42, Chapter 1.3 (9/98).

(e) Sulfur and ash contents assumed to be 1 %. H₂SO₄ estimated assuming all SO₂ combines with water in stack to form acid mist.

(f) Emission factor from the Mill PSD application dated September 2000.

(g) Emission factor from Mill Emissions Inventory System for 2000 and 2001.

(h) Air Emissions from Scrap Tire Combustion, EPA-600/R-97-115, October 1997; Facility A -100% TDF emission factor used for CO.

(i) AP-42, Chapter 1.7 (9/98) used for TDF assuming that TDF has similar emission characteristics to lignite.

(j) Existing permit limit for the boiler.

TABLE B-4
MEADWESTVACO, WICKLIFFE, KENTUCKY BARK
BOILER TDF TRIAL TEST PSD APPLICABILITY
ANALYSIS

		Future	Net	PSD
	Baseline	Potential	Emissions	Significance
	Average(a)	to Emit(b)	Increase	Threshold
Pollutant	(tons/trial period(yr))	(tons/trial period(yr))	(tons)	(ton/trial period(yr))
PM/PM ₁₀	2.6	8.5	5.9	25/15
NO _x	10.5	33.9	23.4	40
S ₀₂	28.1	67.9	39.8	40
VOC	0.1	0.9	0.9	40
CO	3.5	4.3	0.8	100
Pb	1.2E-05	6.4E-05	5.2E-05	0.6
Fluorides	7.1E-06	0.1	0.1	3
TRS/H ₂ S(c)	0.0	0.0	0.0	10
H ₂ SO ₄	0.1	0.2	0.1	7

(a) Baseline average emission rate based on maximum 30 day heat input over the last 2 years of 446 MMBtu/hr and facility specific or AP-42 emission factors. The Mill has historically reported PM = PM₁₀. The proposed trial period is a total of 269 operating hours per rolling 12-month period.

(b) Potential to emit based on the following fuel mix:

TDF: Equal to 15% of the maximum hourly heat input of 631 MMBtu/hr.

Bark/Woodwaste: Equal to the remaining hourly heat input after considering the contribution from TDF, natural gas.

Natural Gas: Equal to 5% of the maximum hourly heat input of 631 MMBtu/hr.

Waste Oil: Used 2001 ratio of waste oil (MMBtu) to total boiler (MMBtu) to calculate waste oil usage.

NCG's: Equal to 2001 data.

(c) No change in TRS/H₂S emissions is expected as a result of the proposed trial test as these pollutants are related to pulp production process non-condensable gases (NCGs) that are incinerated in the boiler. Pulp production, and related NCGs, will not be impacted by the combustion of TDF in the boiler; therefore no TRS/H₂S emissions increases are quantified.

Regulatory Analysis:

Only regulations that could potentially be applicable to the combination boiler as a result of the TDF firing project are addressed below. The combination boiler is subject to 40 CFR Part 60 Subparts D and BB and 40 CFR 61 Subpart E for existing fuel firing scenarios. The existing emission and operating limitations are not re-addressed in this regulatory analysis as they will be unaffected by the addition of TDF firing in the boiler.

Applicable regulations:

401 KAR 52:020 – The Mill is in the process of receiving a Draft Title V operating permit. Based on the status of the Draft Title V permit, the project is subject to Section II of the “Cabinet Provisions and Procedures for Permit Issuance”. The proposed project represents a “Significant Permit Revision” as defined in 401 KAR 52:020 Section 16 because it:

- does not qualify as an administrative amendment or a minor permit revision; and
- will require the Mill to request new federally enforceable permit limitations to avoid PSD applicability.

The requirements of 401 KAR 52:020 are met by the issuance of this permit.

Non-Applicable regulations:

401 KAR 51:017 – Prevention of Significant Deterioration is potentially applicable since the Mill is a major stationary source as defined in 401 KAR 51:017. Based on the calculated emissions increase (with a limitation on total hours of TDF burned), the proposed trial test project will not result in a significant emissions increase for any PSD-regulated pollutants for the trial test period. Therefore, the project is not a major modification and the PSD permitting requirements in 401 KAR 51:017 do not apply.

401 KAR 51:160 – NO_x Requirements for Large Utility and Industrial Boilers is applicable to fossil fuel fired combustion units rated at greater than 250 MMBtu/hr heat input or that serve a generator rated at greater than 25 MWe. The combination boiler is rated at greater than 250 MMBtu/hr; however, the unit is not fossil fuel fired as defined at 401 KAR 51:001. A combustion unit is considered “fossil fuel fired” if the firing of fossil fuels account for greater than 50% of the unit's total heat input during 1995. The boiler mostly fired sludge, wood, and only 5% natural gas in 1995. Based on the boiler fuel mix 401 KAR 51:160 does not apply to the project.

40 CFR 60 NSPS Subparts A and Db – New Source Performance Standards (NSPS) are incorporated by reference in the Kentucky Administrative Code in 401 KAR 60:005. The only new potentially applicable NSPS for this project is Subpart Db entitled “*Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units*” which applies to steam generating units rated at greater than 100 MMBtu/hr heat input capacity that are constructed, reconstructed, or modified after June 19, 1984.

The project does not constitute a reconstruction as it will not cost greater than 50% of the cost of an entirely new boiler. The project is not a modification as defined under Part 60 in that actual NO_x and PM/PM₁₀ emissions will be lower when firing TDF than firing the current fuel mix. Based on site-specific test data and a comparison of SO₂ emission factors for bark/wood waste and natural gas firing versus TDF, the emission factors show a potential increase in the SO₂ emission rate on a

lb/MMBtu basis. However, based on information presented in the EPA “*Air Emissions from Scrap Tire Combustion*” and conversations with TDF industry representatives, it is expected that the firing of TDF in combination with bark will significantly reduce SO₂ emissions due to the scrubbing effect bark exhibits on acid gases. Since the Mill will not fire TDF without bark, it is reasonable to assume that SO₂ emissions will not increase above the current actual emission rate. Since there will not be an increase in emissions from any NSPS regulated pollutant as a result of the project, the project is not considered a modification under the NSPS general provisions and Subpart Db does not apply. Testing requirements are added in the permit to verify this assumption.

EMISSION AND OPERATING CAPS DESCRIPTION:

No changes were proposed to the existing emission and operating limitations for the combination boiler (EIS 09). The following operating limitation was added to the permit for the TDF firing periods:

- The permittee shall not fire TDF fuel in the combination boiler for greater than 269 hours per rolling 12-month period.

Public Notice:

The public notice was published in *The Advance Yeoman* on December 15, 2004. The public notice expired 30 days from the published date. Comments were received from the Source. A response to the Source's comments is given in Attachment A, *DAQ Response to Draft TDF Trial Burn Air Permit Review Comments*.

PERIODIC MONITORING:

No changes were proposed to the existing periodic monitoring requirements for the combination boiler (EIS 09). The following monitoring conditions were added to the permit for the TDF firing periods:

- The permittee shall monitor and record the total operating hours during which the combination boiler is firing TDF fuel during the trial test period.
- The permittee shall monitor and record the daily amount of TDF (in tons) fired in the combination boiler during the trial test period.

OPERATIONAL FLEXIBILITY: Not applicable.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.